REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

I. **Status of All Claims**

Claims 1-7 are pending. Claims 1 and 7 are independent claims. Claims 2-6 depend directly or indirectly from claim 1.

Claim 1 is currently amended. Claim 7 is new. The changes to claim 1 further clarify claim 1. The specification of this application fully supports the changes to claim 1 and new claim 7. Therefore, no new matter has been added.

II. **The Rejections under 35 USC 103(a) Based Upon U.S. Patent No. 6,426,961 to Nimmagadda in view of U.S. Patent No. 5,422,939 to Kramer et al. ("Kramer") - Claims 1, 2, and 4**

A. **Claim 1**

1. **Claim 1 Defines a "...first threshold...and...a second threshold...higher...by a minimally required current level..."**

Claim 1, as currently amended, recites:

> 1. A method in a communications system having a first terminal device and a second terminal device, said method recognizing an off-hook condition of said second terminal device at a two-wire subscriber line in a switching center, comprising the steps of:
>
> acquiring a loop d.c. of a two-wire subscriber line with a first terminal device working in a first frequency band and comparing said acquired loop d.c. to a *first threshold*, thus recognizing an off-hook condition of said first terminal device; and
>
> comparing said loop d.c. to a *second threshold* that is *higher* than said first threshold *by a minimally required current level* in operating said first terminal device. [Emphasis added.]

1. **The Support for Claim 1**

1. **Both Devices On-hook and Quiescent - Loop Current Equals Zero**

The specification of this application defines condition "a1" to be "a1) both the analog terminal device 2 as well as the digital terminal device 3 (modem) are in the quiescent condition

(loop current i = 0)." Specification at page 5 lines 16-17. The specification of this application defines condition "b1" to be "b1) both the analog terminal device 2 as well as the digital terminal device 3 (modem) are in the quiescent condition (loop current i = 0)." Specification at page 6 lines 11-12. Therefore, in an exemplary embodiment illustrated by the specification of this application, the loop current equals zero when *both* analog terminal device 2 and digital terminal device are "quiescent," that is, *onhook.*

2. **One Device Off-hook and Active - Loop Current Reaches First Threshold**

The specification of this application further states, for example, at page 6 line 21 to page 7 line 7 that:

> Except for the line conditions al and bl where *no loop current flows (i = 0)*, the current that can be acquired in terms of its amount by the indicator 7 flows for the other line conditions. The indicator 7 of the subscriber circuit 6 in the exchange is always operating in order to identify whether a *DC current differing from zero* flows over the two-wire subscriber line 4 and whether this exceeds a specific event threshold or a threshold. When this *loop DC exceeds a threshold* that currently lies at *approximately 10 mA* for recognition of the off-hook condition at analog terminal devices 2, one (at least) of the two terminal devices is in the *off-hook condition or activated*, since a loop DC that can be acquired by the indicator 7, and exceeds the event threshold, flows. [Specification at page 6 line 21 to page 7 line 7; emphasis added.]

3. **Both Devices Off-hook and Active - Loop Current Reaches Second Threshold**

The subject matter of claim 1 is further supported, for example, by the specification at page 4 lines 1-2, which states "[o]ne preferred embodiment sets the first threshold at approximately 10 mA," and at page 7 lines 12-14, which states "[f]ollowing the setup of the data connection, it is expedient to reduce the loop DC flowing during the data connection, for instance by raising the DC resistance with the assistance of an active current source or sink 8 to approximately 5 mA." Therefore, the specification discloses that the claimed "minimally required current level" could be, for example, 5 mA. Therefore, the claimed "second threshold that is higher than said first threshold by a minimally required current level," recited in claim 1, could be, for example, 10 mA + 5 mA, or 15 mA. Therefore, the applicant's specification

supports a "first threshold" of 10mA, for example, and a "second threshold" of, 15 mA, for example.

The specification of this application further states at page 7 lines 15-22, for example, that:

> ...As a result of the *change of the loop DC i* when the *handset* of the analog terminal device 2 is *picked up given an existing data connection*, this *new off-hook condition* can be acquired as a result.
>
> This is conversely possible given an *existing analog telephone connection* and *subsequently triggered off-hook condition at the digital terminal device* 3. When the *further off- hook condition* has been initially recognized in the exchange 5, all further circuit measures necessary at the exchange can be triggered for the setup of the connection, the transmission of dial tones, interpretation of dialed pulses, etc. [Specification at page 7 lines 15-22; emphasis added.]

The applicant's disclosure thus illustrates an exemplary embodiment of the claimed "second threshold" where "[a]s a result of the change of the loop DC i when the handset of the analog terminal device 2 is picked up given an existing data connection, this new off-hook condition can be acquired as a result."

2. **Kramer Does Not Disclose or Suggest a "second threshold"**

Although Kramer may disclose a first threshold, the applicant respectfully submits that Kramer does *not* disclose or suggest the claimed "second threshold" recited in claim 1.

1. **Kramer's "average interval for charging" Is Not a "first threshold"**

The office action mailed December 31, 2003, states at page 3 lines 1-10 that:

> Kramer teaches a method in a communications system that detects the loop direct current and voltage of a two-wire subscriber line with a first terminal device (Col 2, lines 36-38) and compares the measurement to a threshold to determine an. off-hook condition in the first terminal device. Kramer measures the time it takes to charge up a capacitor as an indication of the level of the voltage across and current flow in the subscriber loop. The time to charge the capacitor when all lines are onhook is measured periodically and averaged together in order to provide a reference by which the comparison threshold is based on (Col 2, lines 47-66). The comparison threshold of the capacitor that is obtained with all devices on-hook is the **First Threshold.** [Office action mailed December 31, 2003, at page 3 lines 1-10; emphasis in original.]

For the reasons given below, the applicant respectfully submits that the examiner's factual assertion that the "...comparison threshold of the capacitor that is obtained with all devices on-hook..." is the claimed "first threshold" is incorrect.

b. **Kramer's "average interval for charging" - Both Devices On-hook and Quiescent**

Kramer at column 2 lines 47-66 states that:

> As part of the line availability detection, an *average interval* for *charging* a capacitor to a threshold in response to an *on-hook voltage* appearing *across the telephone line* is determined and periodically updated. Typically, the average is determined by periodically applying the line voltage to charge the capacitor. During each periodic sampling, the time to charge the capacitor is measured and the time is recorded as a sample interval. The current sample interval and a previously stored average interval are averaged together, and the new average value is stored. Subsequently, at a time when the secondary communication device is ready to use the line, the time interval for charging the capacitor in response to the voltage appearing across the telephone is measured. If the secondary communication device determines that the measured time interval exceeds the stored average interval by more than a predetermined amount, the secondary device recognizes that the telephone or other primary customer premises equipment is off-hook. [Kramer at column 2 lines 47-66; emphasis added.]

c. **Kramer's "average interval for charging" Corresponds to the Applicant's Disclosed Loop Current of Zero**

Kramer states that "...an average interval for charging a capacitor to a threshold in response to an on-hook voltage appearing across the telephone line is determined...." Therefore, Kramer's "average interval for charging" corresponds to the condition where *both* the telephone or other primary customer premises equipment and the secondary communication device are *on-hook*, that is, quiescent or inactive. In an exemplary embodiment illustrated by the specification of this application, the condition where both analog and digital devices are quiescent, that is, on-hook, is characterized, for example, by a loop current of zero. Therefore, it would be clear to one of ordinary skill in the art that Kramer's "average interval for charging"could only correspond to the applicant's disclosed loop current of zero and not to the claimed "first threshold." This is

because the applicant's"first threshold," as disclosed and claimed, indicates that an analog or digital device is *off-hook* and active.

2. **Only Kramer's "measured time interval exceeds the stored average interval" Could Correspond to the Claimed "first threshold"**

Kramer states that "[i]f the secondary communication device determines that the measured time interval exceeds the stored average interval by more than a predetermined amount, the secondary device recognizes that the telephone or other primary customer premises equipment is off-hook." This is the only disclosure of Kramer cited by the examiner that could correspond to a first threshold, because the applicant's"first threshold," as disclosed and claimed, indicates that an analog or digital device is *off-hook* and active.

3. **Conclusion - Nimmagadda In Combination With Kramer Does Not Disclose or Suggest a "second threshold"**

Therefore, although Kramer may disclose a first threshold, for the reasons stated above the applicant respectfully submits that Kramer does not disclose or suggest a "second threshold" as recited by claim 1 and disclosed by the specification of this application, indicating that two terminal devices are off-hook and active.

The examiner acknowledges that Nimmagadda does not disclose or suggest the claimed "second threshold" recited in claim 1. Office action mailed December 31, 2003, at page 2 item (2)(a)(i).

Therefore, Nimmagadda in combination with Kramer does not disclose or suggest the claimed "second threshold" recited in claim 1. Therefore, Nimmagadda in combination with Kramer does not disclose or suggest the subject matter of claim 1. Therefore, the rejection of claim 1 is improper and should be withdrawn.

B. **Claims 2 and 4**

Claims 2 and 4 depend from claim 1. Therefore, claims 2 and 4 define over Kramer for at least the reasons given for claim 1.

III. **The Rejection under 35 USC 103(a) Based Upon Nimmagadda and Kramer in view of U.S. Patent No. 5,506,891 to Brown - Claim 3**

Brown does not disclose or suggest recognizing an off-hook condition in a switching center and a second threshold that is higher...by a minimally required current level, as defined by claim 1. Claim 3 depends from claim 1. Therefore, Brown in combination with Nimmagadda and Kramer does not disclose or suggest the subject matter of claim 1 or claim 3. Therefore, the rejection of claim 3 is improper and should be withdrawn.

IV. **The Rejection under 35 USC 103(a) Based Upon Nimmagadda and Kramer in view of U.S. Patent No. 5,398,277 to Martin, Jr. et al. ("Martin") - Claim 5**

Martin does not disclose or suggest recognizing an off-hook condition in a switching center and a second threshold that is higher...by a minimally required current level, as defined by claim 1. Claim 5 depends from claim 1. Therefore, Martin in combination with Nimmagadda and Kramer does not disclose or suggest the subject matter of claim 1 or claim 5. Therefore, the rejection of claim 5 is improper and should be withdrawn.

V. **The Rejection under 35 USC 103(a) Based Upon Nimmagadda and Kramerand Further in view of Brown and U.S. Patent No. 6,240,177 to Guntzburger et al. ("Guntzburger") - Claim 6**

Guntzburger does not disclose or suggest recognizing an off-hook condition in a switching center and a second threshold that is higher...by a minimally required current level, as defined by claim 1. Claim 6 depends from claim 1. Therefore, Guntzburger in combination with Nimmagadda, Kramer, and Martin does not disclose or suggest the subject matter of claim 1 or claim 6. Therefore, the rejection of claim 6 is improper and should be withdrawn.

VI. **New Claim 7**

New claim 7 recites:

7. (New) A communications method, comprising:

measuring in a switching center a loop direct current of a two-wire subscriber line electrically connected to a first terminal device and to a second terminal device;

comparing said loop direct current to a *first threshold current*, wherein said first threshold current is higher than said loop direct current measured when said first terminal device and said second terminal device are both on-hook;

recognizing an off-hook condition of said first terminal device;

comparing said loop direct current to a *second threshold current*, wherein said second threshold current is *higher than said first threshold current by a minimally required operating current level of said first terminal device*; and

recognizing an off-hook condition wherein both first terminal device and said second terminal device are off-hook at the same time. [Emphasis added.]

Therefore, the applicant submits that new claim 7 patentably defines over the cited references for at least the reasons given above for claims 1-6.

VII. **Closure**

The applicant submits that claims 1-7, as presently amended, patentably define over the asserted references. Therefore, the present application is in condition for formal allowance. Should the examiner have any questions, he is urged to contact the undersigned at 703-415-0012.

Respectfully Submitted,

3/31/2004
Date

Robert G. Crockett

Richard A. Neifeld, Ph.D.
Registration No. 35,299
Robert G. Crockett
Registration No. 42,448

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Printed: March 31, 2004 (3:58pm)
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